



---

# ITRI 671

## PROJECT

---

Faculty of Natural and Agricultural Sciences

***Study guide compiled by: Drs C Venter, R Goede, T Benadé and Ms JT Terblanche (2017)***

***Reviewed by: Dr I Smit (2021)***

*Copyright © 2017 edition. Review date: 2021.*

*North-West University, Vanderbijlpark.*

*No part of this document may be reproduced in any form or in any way without the written permission of the publishers.*





## NORTH-WEST UNIVERSITY

### *Module-inligting*

<b>Module code</b>	ITRI 671
<b>Module name</b>	Project
<b>Module Credits</b>	32 credits A student should spend 320 study hours on this module to master outcomes successfully.
<b>NQF level</b>	8
<b>Additional resources to complete module successfully</b>	Access to the Internet, a computer and prescribed software e.g. EndNote, and as communicated to students. eFundi will be used to communicate with students.

### *Lecturer and contact information*

<b>Name of lecturer(s)</b>	Dr Imelda Smit (VC) [Dr Trudie Benadé (PC)]
<b>Office telephone</b>	016 910 3294
<b>Email address</b>	<a href="mailto:Imelda.Smit@nwu.ac.za">Imelda.Smit@nwu.ac.za</a>
<b>Building and Office nr</b>	8 G34 (VC)
<b>Consulting hours</b>	As communicated via efundi

### **Introduction**

The aim of the honours project is to learn to conduct research and gain research experience. Students must master research paradigms and methodologies, e.g. positivistic, interpretive, critical social theory and design science research, and apply a suitable method to conduct ethical research. Students must demonstrate the ability to critically evaluate a research article, formulate a research question, set objectives, do literature reviews, conduct empirical work and draw conclusions (based on the research question). Becoming proficient at of these concepts put the student on track to become a good Masters' student.

### **Teaching and learning in this module**

Traditional teaching and learning is combined with self-directed learning (SDL) in this module. The approach is sensitive to the NQF level of this module.

Students will work with supervisors that will guide them to plan and conduct the research, as well as to write the research report. Still, the students will take full responsibility, based on SDL, for the practical research project.

## Module outcomes

---

On completion of this module students should have sufficient knowledge to:

- Plan and conduct research, as well as write a research report (mini-dissertation).
- On theoretical level, the students should have insight and a basic knowledge of the following concepts of research: Academic writing, research paradigms, research methodologies, ethics in research, a research proposal, literature reviews and empirical research.
- From a practical perspective, students should demonstrate the ability to: Critically evaluate a research article, develop a research proposal and write a research report, as well as present their research.

## Requirements for the project

---

The project takes on the form of a mini-dissertation. The mini-dissertation should have all the components of a dissertation including:

- Chapter 1: Problem substantiation and objectives in the form of a research proposal (+7 pages)
- Chapter 2: Literature review on key concepts of the study (+15 pages)
- Chapter 3: Literature review on the research methodology chosen for the study (+8 pages) and a research plan for the study (+3 pages)
- Chapter 4: Empirical report (+30 pages)
- Chapter 5: Summary and conclusions (+6 pages)
- References: List of sources used (+4 pages)

## Selection of project topic

---

A list of possible research areas/topics will be provided to students. The aim is to accommodate students within established research areas in the Faculty. Students may suggest their own topics; however, they will then have to find a suitable supervisor.

## Assessment

---

The aim of the theoretical part of this module is to guide students to internalise research concepts. The assessment criteria are developed to facilitate the process of understanding and applying concepts.

A complete plan, with dates/times of classes and due dates for all assignments and chapters, will be communicated via eFundi. All assignments are compulsory.

## Time scheduling:

Time planning is crucial in this module. You cannot expect your supervisor to read your entire document and the end of the year for the first time and then give you constructive comments, or read your entire chapter for the first time a day or so before the submission due date thereof and provide you with comments for improvement. Chapters must be submitted at least twice to your supervisor for comments. Expect your supervisor to use one week to return your document to you with comments.

Communicate regularly with your supervisor and adhere to planned dates agreed with him/her, to ensure that you meet the overall deadlines of chapters as communicated via eFundi, and deliver a high-quality project. Refer also to Appendix 3 for an example contract; a contract must be agreed upon and signed by the students and supervisor.

## Assessment plan:

Formative assessment methods:	Summative assessment methods:
Presentation of the proposal Submissions of chapters	Presentation of the research Final submission of the research report

## Calculation of marks:

Participation mark	Vanderbijlpark campus: 5% Colloquium presentation of proposal & plan 15% Research proposal 20% Research Methodology 20% Literature Review 25% Empirical research 15% Conclusion	Weight:70
Examination mark	Vanderbijlpark campus: 20% Final colloquium presentation of project 80% Final research report	Weight:30

A module mark of at least 40%, as well as satisfactory attendance of facilitated class sessions, must be attained to qualify for entrance to the exam. In the exam a minimum mark of 45% must be attained for the exam, and a final mark of at least 50% is required to pass the course. \*Refer to eFundi for the final marking scheme.

## Group work:

Will be communicated via eFundi.

## Study materials

---

There are two prescribed textbooks for this module.

### **Reference 1:**

First Steps in Research. Kobus Maree

ISBN: 978-0-627-02688-1

Publisher: Van Schaik Publishers

### **Reference 2:**

Researching Information Systems & Computing. Briony Oates

ISBN: 978-1-41290-224-3

Publisher: Sage Publications

### **Additional material:**

The Practice of Social Research, Earl Babbie

Writing for Computer Science, 2nd edition, Justin Zobel

It is expected of students to make extensive use of additional material and do extensive research, as indicated in specific study units.

## Class attendance

---

Assessment (in any form) may take place during class and therefore it is essential to attend all classes. We also learn from each other's questions and comments.

## Action verbs

---

Questions in assignments usually contain certain key/action words. Students have to know what the action words mean and what is expected of them in answering the questions. In view of this, a brief list of such words is provided.

- ♦ Give an overview

A large volume of knowledge must be summarised and reproduced in a logical and structured way without losing the essence of the matter.

- ♦ Explain

The matter must be put forward in a simple way so that the reader will understand it. Illustrations, descriptions and examples must be used.

- ♦ Compare

Facts, events or problems must be put opposite each other; similarities and differences must be brought to the fore. The one issue should not be discussed first and then the other!

- ♦ Discuss

The different aspects of an issue or statement must be examined and stated in an analytical way. This type of question presumes insight and the ability to distinguish.

- ♦ Analyse

The content must be divided into sections and discussed. Causes and consequences must be determined and relations established.

- ♦ Evaluate / *Evalueer*

An issue must be assessed on the basis of certain criteria.

## Warning against plagiarism

---

**Supervisors will not read a document with a Turnitin score of more than 15% and an individual score of more than 1% excluding direct quotes.**

**No literature review will be considered without in-text references and a complete reference list. Students must make use of EndNote for referencing.**

**ASSIGNMENTS ARE INDIVIDUAL TASKS AND NOT GROUP ACTIVITIES (UNLESS EXPLICITLY INDICATED AS GROUP ACTIVITIES).**

**Copying** of text from other learners or from other sources (for instance the study guide, prescribed material or directly from the internet) is **not allowed**—only brief quotations are allowed and then only if indicated as such.

Existing text should be **reformulated** and **own words** used to explain what you have read. It is not acceptable to retype existing text and just acknowledge the source in a footnote – you should be able to relate the idea or concept, without repeating the original author to the letter.

The aim of the assignments is not the reproduction of existing material, but to ascertain whether you have the ability to integrate existing texts, add your own interpretation and/or critique of the texts and offer a creative solution to existing problems.

**Be warned: students who submit copied text will obtain a mark of zero for the assignment and disciplinary steps may be taken by the Faculty and/or University. It is also unacceptable to do somebody else's work, to lend your work to them or to make your work available to them to copy – be careful and do not make your work available to anyone!**

For the NWU link for plagiarism, go to [http://www.nwu.ac.za/webfm\\_send/25355](http://www.nwu.ac.za/webfm_send/25355)



# Study Unit 1

---

## Academic Writing

**Aim:** The objective of this unit is to understand how academic writing differs from casual writing; to use the referencing format prescribed by the NWU; and to understand what plagiarism is and the role of Turnitin. Refer also to the Appendix at the end.

**Study Material:** Will be provided on the eFundi site under Resources.

## Study Unit 2

---

### Research paradigms

**Aim:** The aim of this study unit is to provide an introduction to students on research paradigms. Four research paradigms namely: Positivism; Interpretivism, Critical Social Theory and Design Science Research will be presented. Students must understand the ontological and epistemological assumptions of each of these paradigms and have a clear understanding of how metaphysical assumptions guide the research practice.

**Study Material:** Will be provided on the eFundi site under Resources.

# Study Unit 3

---

## Research Methodology

- Positivism and Quantitative data analysis

**Aim:** The aim of this study unit is to provide an introduction to positivism and quantitative research methods. Students need to understand quantitative data collection and analysis methods. Students need to understand the aim and requirements for the use of specific methods. Methods introduced include descriptive statistics, factor analysis and regression.

**Study Material:** Will be provided on the eFundi site under Resources.

- Interpretivism and Qualitative data analysis

**Aim:** The aim of this study unit is to provide an introduction to interpretivism and qualitative research methods. Students need to understand qualitative data collection and analysis methods. Students need to understand the requirements for the use of specific methods and the aim of specific methods. Methods introduced include interviews and content analysis.

**Study Material:** Will be provided on the eFundi site under Resources.

- Critical Social Theory and Design Science Research

**Aim:** The aim of this study unit is to provide an introduction on Critical Social Theory and Design Science Research. Students need to understand the differences in the paradigms. Students should be able to analyse a case and suggest and substantiate which of the two approaches are more suitable. The phases and general guidelines of the methods should be understood.

**Study Material:** Will be provided on the eFundi site under Resources.

# Study Unit 4

---

## Research proposal

**Aim:** The aim of this study unit is to provide an introduction to students on how to compile a research proposal. Students need to understand the aim and components of a proposal. The relationships between components, objectives and title of the study should be understood.

When writing a research proposal you must identify the problem you want to address in your project in terms of a primary objective and secondary objectives. The primary objective is the overall problem description while the secondary objectives are the steps you need to take to achieve the primary objective. You should divide your secondary objectives into theoretical objectives for your literature reviews and empirical objectives for your practical work. After the formulation of the objectives, you need to formulate a good title for your project representative of the primary objective.

**Study Material:** Will be provided on the eFundi site under Resources.

**Submission:** Assignment will be provided on the eFundi site.

# Study Unit 5

---

## Ethics in research

**Aim:** The aim of this study unit is to provide an introduction to ethics in research. Students need to understand what ethical behaviour is, when and how to use the name of the University, how to obtain ethical clearance and how to protect privacy of participants.

**NB. All students that gather data from participants will be required to submit an application to the relevant Ethics Committee.**

Forms to be completed will be provided on eFundi. Due dates will also be communicated.

**These forms must be submitted timeously by students as the Committee only meet on specific pre-determined dates. If your application is not handed in on the due date communicated to you your application will not be reviewed and you will not be allowed to gather data.**

**Study Material:** Will be provided on the eFundi site under Resources.

**Submission:** Assignment will be provided on the eFundi site.

# Study Unit 6

---

## Chapter 2 Literature review on research methodology

**Aim:** The aim of this study unit is to learn to do a literature review on the chosen methodology you will use. Focus on data collection and analysis, and presentation of findings.

Note: This is general information on the research methodology. E.g. describe how to select participants in general—your participants are reported on in Chapter 4.

**Submission:** Assignment will be provided on the eFundi site.

# Study Unit 7

---

## Chapter 3 Literature review on key concepts

**Aim:** The aim of this study unit is to gain an understanding to study the primary concepts of the project. Identify the “keywords” of your study and perform a literature review on the topics. While you do the literature review, work on the motivation for your study—be sensitive to shortcomings or problems your study may address. Your best training to write a literature review comes from reading others! Carefully analyse what you are reading in terms of how it was written!

Here are a few guidelines to assist you with your literature review:

- Read a lot before you start writing—try to develop sub-objectives for your literature objectives eg. if you are studying Systems Thinking (ST) your objective should have been:
  - Perform a literature review on ST
    - Study the origins of ST
    - Study the different developments of ST
    - Study applications of ST
- Develop a structure for your review in terms of sections and subsections and discuss it with your supervisor—your sections should link to your objectives!!!
- Write down what you have learnt in bullet format first and add references to each bullet.
- Remember each paragraph must have a central idea, so extend a bullet to become a paragraph with supporting references.

**Submission:** Assignment will be provided on the eFundi site.

# Study Unit 8

---

## Chapter 4 Empirical research

**Aim:** This chapter contains the report of the empirical research that was performed. It is a good idea to expand your empirical objectives first. If you are collecting data with an interpretive interview or questionnaire you need to link each question to the objectives of your study and parts of your literature review. Remember to manage your scope—do not have too many questions!! Although the scope is small you need to be specific on data collection methods and participant selection strategies. Be sure to report on empirical work in terms of data collection, data analysis and results and also in terms of the methodology that you applied.

**Submission:** Assignment will be provided on the eFundi site.



# Study Unit 9

---

## Chapter 5 Conclusion

**Aim:** The final chapter should revisit the objectives. You should now state how you achieved each objective individually and present a summary of findings per objective.

**Submission:** Assignment will be provided on the eFundi site.